

**WE CLAIM:**

1. A system for field or onsite use in determining a failure of a vehicle to stop at a traffic sign or signal and capturing images of the vehicle, comprising:

5 a laser-based speed detector determining a speed of a vehicle in an enforcement window adjacent the sign or signal and in response, generating a speed signal;

a camera aligned with the speed detector capturing and storing an image of the vehicle, wherein the camera is adapted for operating in response to an image capture signal; and  
10

a portable field processor communicatively linked with the speed detector and the camera, wherein the portable field processor receives the speed signal from the speed detector, compares the speed signal to a  
15 capture speed threshold, and when the threshold is determined to be exceeded, transmits the image capture signal to the camera.

2. The system of Claim 1, wherein the image is a digital-format still image of the vehicle stored by the camera in camera memory, wherein the camera responds to the image capture signal to generate and transmit a  
5 digital image file including the digital-format still image to the portable field processor, and wherein the portable field processor operates to create a combined speed and image data file by modifying the digital image file to include speed data from the speed signal.

3. The system of Claim 2, wherein the digital image file is a JPEG-format file and the modifying includes inserting the speed data in a header of the JPEG-format file.

4. The system of Claim 1, wherein the processor includes an input device receiving the capture speed threshold as inputted by an operator.

5. The system of Claim 4, wherein the capture speed threshold is less than about 30 miles per hour.

6. The system of Claim 5, wherein the capture speed threshold is selected from the range of about 10 to about 20 miles per hour.

7. The system of Claim 1, wherein the camera continuously captures and stores images including one image per image timing cycle, and wherein the portable field processor synchronizes operation of the detector and the camera by transmitting the image capture signal within the image timing cycle in which the one image is the capture image of the vehicle.

8. The system of Claim 1, wherein the enforcement window has a front end positioned in a road lane adjacent the sign and about 10 to 20 feet from the sign as measured in the lane away from the sign in a direction opposite traffic flow in the lane.

9. A method of determining violation by a vehicle of a traffic sign or signal that requires the vehicle to stop and capturing a digital image of the vehicle, comprising:

5 positioning a speed detector and a camera at a location selected relative to the traffic sign or signal for monitoring vehicle traffic through an enforcement window in a road lane adjacent the traffic sign or signal;

10 operating the camera on an ongoing basis to capture still images of vehicles passing through the enforcement

window and to store the still images at least temporarily in memory;

15 determining the speed of a targeted vehicle in the enforcement window with the speed detector;

transmitting the speed from the speed detector to a portable field processor;

20 processing the speed with the portable field processor to determine whether a capture speed threshold has been exceeded and when determined exceeded, transmitting a trigger signal to the camera; and

25 at the camera, receiving the trigger signal, retrieving a still image corresponding to the targeted vehicle from memory, and transmitting the still image in a digital image file to the portable field processor.

10. The method of Claim 9, further including processing the digital image file with the portable field processor to insert or link the speed.

11. The method of Claim 10, further including displaying the processed digital image file on a display of the portable field processor.

12. The method of Claim 9, further including operating the camera to provide charging power to the portable field processor to protect the speed and the digital image file at the portable field processor.

13. The method of Claim 9, further including prior to the operating and determining, entering traffic sign or signal enforcement parameters including the capture speed threshold.

14. The method of Claim 13, further including operating the portable field processor to create a combined digital image file by writing select portions of

the traffic sign or signal enforcement parameters  
5 including the speed into the digital image file.

15. The method of Claim 9, wherein the positioning includes performing ranging of the speed detector including first aiming the speed detector at the traffic signal, operating the speed detector to determine a measurement distance from the speed detector to the  
5 traffic sign or signal, and second aiming the speed detector at a central portion of the road lane.

16. The method of Claim 9, wherein the capture speed threshold is selected from the range of 10 to 20 miles per hour.

17. The method of Claim 9, wherein the capture speed threshold is calculated as a percentage of a posted speed limit for the road lane.

18. A system for use in determining a failure of a vehicle to stop at a traffic sign or signal and for capturing images of the vehicle, comprising:

means for determining a speed of a vehicle in an  
5 enforcement window adjacent the sign or signal and in response, generating a speed signal, wherein the speed determining means comprises a laser-based speed detector;

means aligned with the speed determining means for capturing and storing a video image of the vehicle for a  
10 measurement window, wherein the video image means is adapted for operating in response to an image capture signal; and

processing means communicatively linked with the speed determining means and the video image means for  
15 receiving the speed signal, comparing the speed signal to a capture speed threshold, determining when the threshold

is exceeded, and transmitting the image capture signal to the video image means.

19. The system of Claim 18, wherein the processing means further generates speed data based on the speed signal and wherein the processing means further matches the speed data with the video image.

20. The system of Claim 18, wherein the video image comprises a 10 second or shorter video clip of the enforcement window including an image of the vehicle and wherein the video image means responds to the image  
5 capture signal to generate and transmit a video image file comprising the video clip to the processing means.